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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/935,377	09/22/97	ZAUDERER M	PENY4-628885

HM12/0718
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EXAMINER	
EWOLDT,G	
ART UNIT	**PAPER NUMBER**
1644	18

DATE MAILED: 07/18/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
08/935,377	Zauderer, M.
Examiner	**Group Art Unit**
Gerald Ewoldt	1644

☒ Responsive to communication(s) filed on 5/10/99 and 1/21/00.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *7-16 and 43-67* is/are pending in the application.

Of the above, claim(s) *7-16, 48, 59, and 62-66* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *43-47, 49-58, 60, 61, and 67* (5, 10, 3, 14) is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 15 and 12

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- *SEE OFFICE ACTION ON THE FOLLOWING PAGES* ---

DETAILED ACTION

1. Applicant's amendments, filed 5/10/99 and 1/21/2000, are acknowledged.

2. Applicant's election with traverse of Group IV, Claims 43-61 and 67, in Paper No. 17, is acknowledged. Applicant's further election of the specific method for selecting test recombinants comprising the species of: a vaccinia virus vector and trimolecular recombination is acknowledged. The traversal is on the grounds that examination of Groups II, III, V, and VI at the same time as the examination of Group IV would pose no undue burden because the searches required for the additional inventions would substantially overlap with the search required for the invention of Group IV.

These arguments are not found persuasive for the following reasons. While the searches might overlap, the fields of search for methods involving tumors, autoimmune disorders, fungal infection, mycobacterial infection, and viral infection, and epitopes associated with same, are significantly different. In the instant case, epitopes associated with non-infectious disorders, such as tumors and autoimmune disorders, would likely be endogenous while epitopes associated with fungal infection, mycobacterial infection, and viral infection would likely be exogenous. Additionally, antigens and pathways involved within even the endogenously or exogenously associated disorders would be very specific and require searches of different scope.

The requirement is still deemed proper and is therefore made FINAL.

3. During a telephone conversation with Eric Steffe on 5/9/00 a further election of the vaccinia virus species comprising SEQ ID NOS:3 and 7 was made.

4. Claims 43-47, 49-58, 60-61 and 67 read on the elected species and are being acted upon.

Claims 7-16 and 62-66 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions. Claims 48 and 59 are withdrawn from further consideration by the examiner as being drawn to non-elected species of the elected invention.

5. Upon reconsideration, the art search has been expanded to include SEQ ID NOS: 1, 3, and 6-9 and the vaccinia vector pJ/K.

6. Substitute pages 10-11, 45, 54, 64, 66, 76-77, 79, 81, and 83 of the specification are required pursuant to 37 CFR 1.125(a) because of the excessive number of amendments to said pages of the specification. The amendments, filed 5/10/99, to the specification on the above mentioned pages have not been entered.

Substitute pages 10-11, 45, 54, 64, 66, 76-77, 79, 81, and 83 of the specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute pages of the specification contain additional subject matter not of record, the substitute pages of the specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement that the substitute pages of the specification contain no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute pages of the specification relative to the specification at the time the substitute pages of the specification are filed.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 43-47, 49-58, 60-61 and 67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically:

A) In claims 43-47, 49-58, 60-61 and 67, the recitation of the term "recombinants" renders the claims ambiguous and indefinite because the term has not been defined in the specification.

B) In claims 43-47, 49-58, 60-61 and 67, the recitation of the term "a first population" renders the claims ambiguous and indefinite because the term has not been defined and implies the existence of a second undefined population.

C) In claim 60, the recitation of the term "trimolecular recombination" renders the claims ambiguous and indefinite because the term has not been defined in the specification.

9. Claims 43-47, 49-58, 60-61 and 67 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: in claim 43, how specifically "collecting cells which become nonadherent" comprise "a method for selecting recombinants". No relationship between "recombinants" and nonadherency has been established in the claim. Additionally, it is unclear what relationship T cell contact has with nonadherency.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 43-44, 46-47, 49-52, 54, 56-57, 60-61 and 67 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,843,648 in view of U.S. Patent No. 5,866,383 and Scheiflinger et al. (1992, IDS).

The '648 patent teaches a method of selecting recombinants comprising nonviral DNA constructed in a vaccinia (poxvirus) viral vector (column 7, paragraph 3) encoding a target epitope comprising contacting a population of adherent cells containing test recombinants and which express an appropriate MHC with cytotoxic T lymphocytes (CTL) specific for said target epitope (which then lyse the target cells) and collecting cells which react with the CTL and isolating recombinant DNA (see particularly column 25, paragraph 1 and column 30 last paragraph - column 31 first paragraph).

The '648 patent differs from the claimed invention in that it does not teach the use of test recombinants constructed by trimolecular recombination. Note that the term "trimolecular recombination" has not been clearly defined in the specification and for examination purposes has been assumed to mean a recombination involving 3 components.

The '383 patent teaches the construction by direct DNA ligation, and the use of vaccinia viral vectors, including pJ/K (see particularly columns 14, last paragraph - column 15 first paragraph) for the expression of foreign genes in animal cells (see particularly column 20, last paragraph).

Scheiflinger et al. teaches a method of "trimolecular recombination" involving three components: 1) a vaccinia virus, 2) a fowlpox virus, and 3) foreign DNA, i.e., the DNA of interest to be packaged by the pox virus. Said method of construction allows for a higher efficiency of packaging than previously described methods such as homologous recombination (see particularly page 9979, Figure 1 and page 9981, paragraph 3).

From the teachings of the references it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to perform a method of selecting recombinants comprising nonviral DNA constructed in a vaccinia viral vector encoding a target epitope comprising contacting a population of adherent cells containing test recombinants which express an appropriate MHC with CTL specific for said target epitope and collecting cells which react with the CTL, as taught by the '648 patent, using a vaccinia vector such as the pJ/K vector, as taught by the '383 patent, constructed by "trimolecular recombination", as taught by Scheiflinger et al. One of ordinary skill in the art would have been motivated to perform said selection method using vaccinia vectors constructed by "trimolecular recombination" because said method of construction allows for a higher efficiency of packaging than previously described methods such as homologous recombination, as taught by Scheiflinger et al. Note that Claim 43 recites "collecting cells which become nonadherent"; nonadherency is an inherent property of the cells being lysed and the collection of said lysed cells or the continued growth of unlysed cells

of the same clone, result in the same outcome, i.e., providing a source from which to "select(ing) recombinants encoding a target epitope".

12. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,843,648 in view of U.S. Patent No. 5,866,383 and Scheiflinger et al. (1992, IDS) as applied to claims 43-44, 46-47, 49-52, 54, 56-57, 60-61 and 67 above, and further in view of Sambrook et al. (1989).

The '648 patent, the '383 patent and Scheiflinger et al. have been discussed supra.

The reference teachings differ from the claimed invention only in that they do not teach multiple rounds of screening.

Sambrook et al. teaches the use of multiple rounds of screening when screening for target epitopes. The reference further teaches that multiple rounds of screening are required before a clone can be considered pure (see particularly, page 8.51, paragraph 3, 1989).

From the teachings of the references it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to perform a method of selecting recombinants comprising nonviral DNA constructed in a vaccinia viral vector encoding a target epitope comprising contacting a population of adherent cells containing test recombinants which express an appropriate MHC, with CTL specific for said target epitope and collecting cells which react with the CTL, as taught by the '648 patent, using a vaccinia vector such as the pJ/K vector, as taught by the '383 patent, constructed by "trimolecular recombination", as taught by Scheiflinger et al., followed by multiple rounds of screening, as taught by Sambrook et al. One of ordinary skill in the art would have been motivated to perform said selection method using vaccinia vectors constructed by "trimolecular recombination" because said method of construction allows for a higher efficiency of packaging than previously described methods such as homologous recombination, as taught by Scheiflinger et al., and using multiple rounds of screening because said multiple rounds of screening would be required to obtain a pure clone, as taught by Sambrook et al.

13. Claims 43-44, 46-47, 49-52, 54, 56-57, 60-61 and 67 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,874,560 in view of U.S. Patent No. 5,866,383 and Scheiflinger et al. (1992, IDS).

The '560 patent teaches a method of selecting recombinants comprising nonviral DNA constructed in a vaccinia (poxvirus) viral vector (column 7, paragraph 3) encoding a target epitope comprising contacting a population of adherent cells containing test recombinants which express an appropriate MHC with CTLs specific for said target epitope (which then lyse the target cells) and collecting cells which react with the CTL and isolating recombinant DNA (see particularly column 25, paragraph 3 and column 26 paragraph 4).

The '560 patent differs from the claimed invention in that it does not teach the use of test recombinants constructed by trimolecular recombination.

The '383 patent and Scheiflinger et al. have been discussed supra.

From the teachings of the references it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to perform a method of selecting recombinants comprising nonviral DNA constructed in a vaccinia viral vector encoding a target epitope, comprising contacting a population of adherent cells containing test recombinants which express an appropriate MHC with CTLs specific for said target epitope and collecting cells which react with the CTLs, as taught by the '560 patent, using a vaccinia vector such as the pJ/K vector, as taught by the '383 patent, constructed by "trimolecular recombination", as taught by Scheiflinger et al. One of ordinary skill in the art would have been motivated to perform said selection method using vaccinia vectors constructed by "trimolecular recombination" because said method of construction allows for a higher efficiency of packaging than previously described methods such as homologous recombination, as taught by Scheiflinger et al. Note that Claim 43 recites "collecting cells which become nonadherent"; nonadherency is an inherent property of the cells being lysed and the collection of said lysed cells or the continued growth of unlysed cells of the same clone, result in the same outcome, i.e., providing a source from which to "select(ing) recombinants encoding a target epitope".

14. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,874,560 in view of U.S. Patent No. 5,866,383 and Scheiflinger et al. (1992, IDS) as applied to claims 43-44, 46-47, 49-52, 54, 56-57, 60-61 and 67 above, and further in view of Sambrook et al. (1989).

The '560 patent, the '383 patent and Scheiflinger et al. have been discussed supra.

The reference teachings differ from the claimed invention only in that they do not teach multiple rounds of screening.

Sambrook et al. teaches the use of multiple rounds of screening when screening for target epitopes. The reference further teaches that multiple rounds of screening are required before a clone can be considered pure (see particularly, page 8.51, paragraph 3, 1989).

From the teachings of the references it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to perform a method of selecting recombinants comprising nonviral DNA constructed in a vaccinia viral vector encoding a target epitope comprising contacting a population of adherent cells containing test recombinants which express an appropriate MHC, with CTL specific for said target epitope and collecting cells which react with the CTL, as taught by the '560 patent, using a vaccinia vector such as the pJ/K vector, as taught by the '383 patent, constructed by "trimolecular recombination", as taught by Scheiflinger et al., followed by multiple rounds of screening, as taught by Sambrook et al. One of ordinary skill in the art would have been motivated to perform said selection method using vaccinia vectors constructed by "trimolecular recombination" because said method of construction allows for a higher efficiency of packaging than previously described methods such as homologous recombination, as taught by Scheiflinger et al., and using multiple rounds of screening because said multiple rounds of screening would be required to obtain a pure clone, as taught by Sambrook et al.

15. No claim is allowed.

16. Claims 53, 55, and 58 appear to be free of the prior art.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Gerald Ewoldt whose telephone number is (703) 308-3997. The examiner can normally be reached Monday through Thursday and alternate Fridays from 7:30 am to 5:30 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-3014.

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July 14, 2000

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